

XXII.—*From Arizona to the Pacific.* By ELLIOTT
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THE month spent in slowly passing over the five hundred miles that lie between Fort Whipple, in Arizona, and the coast of Southern California at San Pedro, afforded me a fine opportunity of comparing the *Ornis* of the two regions, which, though possessing much in common, are yet in many points strikingly contrasted with each other. A running commentary upon the more marked ornithological features of the regions traversed may be of interest; albeit the remarks that follow are little more than a collection of the heterogeneous and disjointed notes with which a travelling naturalist's journal is always found crammed.

From Fort Whipple to Fort Mojave, the nearest point on the Colorado river, is a distance of 161 miles in a nearly straight line a little north of west. The nature of the country is such that hardly any change from the Whipple features are to be noticed until the river is nearly reached. At Beale's Springs, a point rather more than halfway, I first noticed *Pipilo aberti* and *P. mesoleucus*, two species abundant in the Colorado valley, but never noticed at Fort Whipple, though found some twenty miles south of that place. As we approach the river, we have an unfailing sign that other species are soon to be encountered, in the increased number and variety of *Cactaceæ*, and their greater luxuriance of growth. And, sure enough, I found, on a dry barren plain covered chiefly with *Opuntia*, *Cerei*, and other cactuses, the rare and hardly-known *Harporhynchus lecontei*. A fine specimen, procured September 30th, 1865, is the second one known to naturalists, the type of the species (procured by my friend Dr. J. L. Leconte, at Fort Yuma, California) having remained unique up to the present time. I think it is a good species, quite distinct from *H. crissalis*, to which it is most nearly allied. Both inhabit the whole valley of the Colorado and Gila rivers, and, though thus associating, seem constantly to preserve their characters. They are shy and retiring birds, frequenting the brush and thickets which, to a greater or less extent, cover the dry plains, and keep much on the ground,

where their large, stout legs enable them to run firmly and rapidly. Their flight is swift and desultory, performed with quick, jerking motions of their wings and flirting of their long broad tails. I saw several other individuals, but was unable to procure more than one. The irides were brown, the legs, feet, and bill black.

Fort Mojave, on the Colorado river, in about lat. 35°, is interesting to us as the locality whence were lately procured two rare and curious new birds by Dr. J. G. Cooper, so well known as an indefatigable and accurate naturalist, and by him named* *Athene whitneyi* and *Helminthophaga luciae*. The Owl is a diminutive little species, about equal to *Glaucidium gnoma* in size, but very widely different in form. Dr. Cooper told me that he hardly thinks it is a true *Athene*, though it comes nearer to that genus than to any other North American one. I have just now carefully examined the type specimen, and find my friend's views fully confirmed. The bird is evidently generically distinct from any other North American form, and I have elsewhere so published it. The *Helminthophaga* is a queer little bird, nothing like any of its congeners in its colours, which are rather those of a *Poli-optila* than a *Sylvicoline*, being plumbeous-grey above and white beneath, with a chestnut crown and rump. I had myself rediscovered it during my stay at Whipple, and obtained several specimens, among which was a fledgling just from the nest, which differed notably in colour from the adult, wanting the chestnut crown—though the rump was of that colour—and having the wing-coverts edged and tipped with very light rufous. Both of us have very full notes of the habits of this interesting little bird.

While at Fort Mojave I gladly availed myself of a kind invitation from the Commanding-General of the Territory to accompany him on a *pasear* down the Colorado river, as far as Fort Yuma. This gave me exactly the opportunity I had been desiring, of adding to my list the many water-birds to be found in the Colorado basin. The month of September was consumed in passing down the river to the point where the Gila mingles its waters with those of the larger stream, which is the extreme

* Proc. Californ. Nat. Hist. Soc. 1861, pp. 118 and 120.

south-west corner of Arizona, and in returning after a few days spent at Fort Yuma. We were on the little steamer 'Cocopah;' and by a singular coincidence her commander, Captain Robinson, was the man who twelve years before had piloted Lieutenant J. C. Ives and his party in the 'Explorer,' the first steamboat that ever passed over the shores and rapids of this difficult river.

Sayornis nigricans, a common species throughout Southern Arizona, was perhaps, among the land birds, our most constant companion. Perched, generally in pairs, upon the dense verdure that in many places overhangs the river, it pursued its constant vocation of securing the vagrant insects around it, ever uttering its peculiar unmelodious notes. In all its motions the Pewee of the Eastern States was unmistakeably reproduced. It was, for a Flycatcher, rather shy and wary, which fact, joined with the almost impassable nature of the thickets, is my only and lame excuse for its absence from my collection. It is not, apparently, a hardy bird, and I never saw it, even in summer, about the Whipple mountains, though in the southern portions, both of Arizona and California, it remains throughout the winter. River-bottoms are but one of its resorts. Like *S. fuscus*, and extremely unlike *S. sayus*, it also delights in deep mountain-gorges and precipitous *cañons*, through which little streams may flow, where upon a jutting bit of rock, or on the bare, flat sand, it unites its sharp cries with the queer ringing laugh trilled out by its neighbour and friend the little *Catherpes mexicanus*.

Often when breaking a toilsome way through next to impassable thickets, I was startled by a loud, clear, sharp chirp, decidedly Fringilline, but far more powerful than usual. It was the alarm-note of *Pipilo aberti*, which everywhere in the valley is a most characteristic bird. Fort Yuma seemed to be its headquarters. A retiring species, like all its congeners, it keeps perseveringly in the most provoking undergrowth, and would rarely find its way into collections were it not so common. It seems to me more decidedly gregarious than most of the genus, often collecting in flocks of a dozen or more, wandering restlessly, yet in a cautious and subdued manner, through the thickets. Associating freely with this species is

another, *P. mesoleucus*, which is little less numerous, and to which my remarks upon *P. aberti* equally apply, except perhaps that it has a less powerful note. During the long moult, which lasts from July far into October, both these birds suffer much, and are in such wretched plumage as to be hardly worth preserving.

At Fort Yuma, in September, I was in time to catch *Helminthophaga celata* on its southward journey. It was not very rare, frequenting low trees, young willows and the like, as well as brush-heaps and thickets; I think that it is much less a tree-species than are its Eastern congeners, and that it approaches *Geothlypis* in its habits. At this season the head is perfectly plain, and the bird looks very much like an autumnal *Dendræca striata*. It is partially gregarious at this season, and its only note is a low, sharp "t'sip."

All along the Colorado valley *Lophortyx gambeli* is singularly abundant. This is a very easily pleased bird, and one by no means fastidious in choice of a residence; for it is equally at home in scorched mezquite-thickets, dusting itself in sand that would blister the naked feet (for the thermometer stood 117° Fahr. in the shade while I was at Yuma!), and in the mountains of Northern Arizona, where pine-boughs are bending under a weight of snow. I have already enlarged on the habits of this bird [*anteà*, pp. 46-55], but I may now add that my friend Dr. Cooper, while at Mojave, brought up young birds by placing the eggs under a common hen, and that he found no difficulty in semidomesticating them as they grew up, to the extent of their associating freely with the barnyard fowls. The eggs, which are white or yellowish-white, with brown spots, were hatched in twenty-four days. From twelve to seventeen have been found in a nest, which latter is a rather rude structure, about eight inches wide, hidden in the grass.

One of the features of the scenery of Yuma is a bird known as the "Colorado Turkey." As the order to which it belongs could never be guessed from this name, I must explain that it is the *Tantalus loculator* of Linnæus, though why called a "Turkey" I know not. These birds are in sight at all times, flying over head with outstretched necks, uttering their rough

eries, or statelily promenading the banks of the little lagunas and sequestered pools that fill the river-bottom. Unlike most large *Grallæ*, they do not much affect the open sandbars or even the mud-flats of the river itself, but fairly deserve their common name of "Wood-Ibis," by their partiality for densely wooded pools and swamps. They have also a peculiar habit of congregating in large numbers high up in the air, where with scarcely any visible motion of their broad wings they circle in majestic sweeps. Their pure white plumage and glossy greenish-black wing-tips form a superb contrast; and their beauty renders more ugly by comparison the dull sombre hues of the Turkey-Buzzards, with which at such times they freely associate—though the Vulture and the Wader may vie with each other in ease and elegance of flight, each sailing and circling with that "poetry of motion" which only some longipennine *Natatores* can surpass.

Here is a simple list of some other water-birds of the river, named somewhat in their order of abundance. Such familiar friends will be recognized in all of them, that I need do no more than mention their names. *Ardea herodias*, *Grus canadensis*, *Garzetta candidissima*, *Herodias egretta*, *Butorides virescens*, *Recurvirostra americana*, *Himantopus nigricollis*, *Botaurus lentiginosus*, *Ardetta exilis*, *Nyctiardea gardeni*, *Chroicocephalus philadelphia*, *Fulica americana*, *Pelecanus trachyrhynchus*, *Phalaropus wilsoni*, and *Podilymbus podiceps*.

I saw many Ducks, but only identified three species—*Dafila acuta*, *Nettion carolinensis*, and *Querquedula cyanoptera*. It was a little too early in the season for the immense flights of Geese and Ducks which a little later would cover the water. For the first time in my life, I saw our two North American Kingfishers (*Ceryle alcyon* and *C. americana*)⁺ together; I believe the latter has not been before recorded from the Colorado river. It is surprising that I did not meet with *Auriparus flaviceps*, since, as Dr. Cooper informs me, it is abundant at Fort Mojave and elsewhere in the valley. *Melospiza fallax* (at best doubtfully distinct from *M. melodia*) is a common Sparrow here.

Before we finally bid good-bye to the river I must advert to the immense numbers of *Hirundo lunifrons* that make its sometimes precipitous and rocky sides their breeding-places. So

1869
216

numerous are the nests at some points, that one spot has received and still bears the name of "Swallow-nest Bend;" and not unfrequently in the midst of the colony of Swallows is placed the rude nest of *Ardea herodias*, flat upon some projecting ledge of rock.

Leaving Fort Mojave, which I did on the 30th of October, before us to the westward lies the Colorado desert—a barren waste of sand and rock which stretches everywhere between the river and the fertile and habitable portions of Southern California. It would be difficult to imagine a region more uninviting or more devoid of varied forms of animal life. It would be a profitless tract for an ornithologist expecting to find variety, though still the few species found are interesting. For whole days hardly more than the Ravens would relieve the monotony of wearisome travel. I cannot forbear to quote from my friend Dr. Newberry, who must have written under the inspiration of the surrounding desolation. "Even on the most sterile and inhospitable portions of the central desert, where heaven withholds her genial showers and earth refuses every tribute to beauty or comfort; where stern and unrelenting sterility reigns supreme and barren sands and rough and ragged rocks, bleached and burnt in the eternal blaze of a cloudless sun, sear the eyeball; here, perched on some blasted pine, the presiding genius of the surrounding desolation, the Raven always sat, and as we defiled past, over the trackless waste, gave us the malediction of his discordant croak." Except the ubiquitous and omnipresent Ravens and an occasional *Anthus ludovicianus*, hardly a bird was seen* for some days after leaving the Colorado, until, crossing the Providence Mountains, we encamped at Soda Lake, the "Sink" of the Mojave river, which, rising in the San Bernadino Mountains of California and flowing in an easterly direction towards the Colorado, is stopped by the Providence Mountains, and quietly sinks in the sand of the desert. Its bed is usually nearly or quite dry, except in spots, for many miles from its sink, and

* Dr. Cooper tells me that on this portion of the route he met with *Poospiza bilineata*, *P. belli*, and *Campylorhynchus brunneicapillus*. The latter, he says, is emphatically and almost exclusively a Cactus-Wren, always found among, and breeding in, plants of this family.

forms the most convenient and perhaps the only practicable route from this portion of Arizona into California. Soda "Lake" is, except at times, even less of a lake than the Mojave is of river, being merely a flat muddy expanse, where the ground for miles is white as snow from the thick deposit of saline efflorescence, whence the spot derives its name. A more desolate and forlorn spot can hardly be conceived; but to an ornithologist it has attractions.

It has been ascertained that just here *Lophortyx gambeli* and *L. californica* find a neutral ground that they both may occupy. Doubtless the western species follows the watercourse until arrested by the desert: I have never heard of its being detected in the Colorado valley, where *L. gambeli* holds undisputed possession; and I think it is exceedingly probable that the representative Jays of the two countries (*Cyanocitta woodhousii* and *C. californica*) may also both be found here; and perhaps the same fact may hold good regarding some other species. Near the sink of the river, Dr. Cooper found *Centrocerus urophasianus*, which I believe is the most southern point at which it has been discovered. I never saw one, nor, indeed, any other species of Grouse, while in Arizona. The same gentleman ascertained the presence of *Trochilus alexandri* on the river. In the heavy rushes that formed clumps of various sizes I heard the loud clatter of *Rallus virginianus*; and happening to be kept awake all night by the unendurable torture of hosts of hungry mosquitoes of a peculiarly large and vindictive species, I am able to state that the Rail emits its unmusical noise as often during the night as the day. Numbers of *Cistothorus palustris* and a few Mallards finish the list of birds observed here.

Towards the head of the river, where the water became permanent, were immense quantities of Geese and Ducks. I pass them over now, as in no way differing from those found at San Pedro, of which I will speak presently.

With the first appearance of anything like verdure, I found myself again among Field-Larks. Arizona is most unaccountably deprived, in a great measure, of these birds; I do not think I saw a dozen during my whole stay there, though many places seem perfectly adapted to their wants. *Gallinago wilsoni*

is found in the moist meadows, and over the marshy tracts of the river the common *Circus hudsonius* may always be seen.

Leaving the Mojave at Lane's Crossing, we in one day got through the Cajou Pass of the San Bernadino Mountains. This pass is about the most eastern recorded locality for the beautiful *Oreortyx pictus*; and, regarding the other Quail of California, *Lophortyx californicus*, we need here have no fear that we shall ever be puzzled with a supposed hybrid between it and *L. gambeli*; for no suspicion of the latter's presence here is to be entertained. *Oreortyx* and *Lophortyx* are so radically distinct in the nature of the localities they frequent, as to be distinguished by the people as the "Mountain" and "Valley" Quail.

Behind San Bernadino and the coast lies about eighty-five miles of plain, open and flat, though by no means desert and sterile, the continuity of which is hardly interrupted. Besides the constant features of such plains—*Eremophila cornuta* and *Anthus ludovicianus*—we find two very interesting birds in considerable numbers. One of these is *Athene cunicularia*, which I supposed to replace *A. hypogæa* in the regions west of the Rocky Mountains. I must confess I have my doubts regarding this strict distribution of the two, and also as to whether they are really distinct, which, however, this is not the place to discuss. The Owls are very numerous, living in the burrows of *Spermophilus beecheyi*, a Marmot-Squirrel exceedingly common in Southern California, though I saw none of its "towns" anything approaching in size those of *Cynomys ludovicianus* that I met with on the Arkansas river. The other bird is *Ægialites montanus*, which seems to me most inaccurately named; for, on the many occasions I have met with the species, it has always been on open, dry, flat, sandy or grassy plains, and *never* on mountains. It may possibly retire to these latter to breed, but I do not think this is the case. Other naturalists support the assertion that the species is exclusively confined to the plains.

It seems, too, to have no special inclination for the vicinity of water, any more than has *Grus canadensis*, or, I had almost said, *Eremophila cornuta*. It is a familiar and unsuspicious bird, and, when not often disturbed, admits of a very near approach, running rapidly and gracefully, with head lowered, often stop-

ping suddenly and, drawing itself up to its full height, watching the intruder with curious eye. Its voice is soft and low, and very peculiar in tone. The iris is dark brown, the legs and feet leaden-blue*.

Among the *Raptores* here at San Pedro we find *Archibuteo ferrugineus* very common. It alights freely on the ground, where I often observed it. At Fort Whipple, where it was abundant, I never saw it except upon trees; and here it may be making a virtue of necessity in thus choosing the bare plain. *Falco nigriceps* and *F. polyagrus* are more uncommon. I shot a specimen of the latter off the roof of my house; it had the eyes brown, bill horn-blue, feet and legs light leaden-blue. *Tinnunculus sparverius*, *Circus hudsonius*, and *Accipiter mexicanus* are very common indeed. Other Hawks of Southern California, near this locality, are *Buteo elegans*, *B. cooperi*, and *B. zonocercus*, all of which have been detected by the tireless industry of Dr. Cooper. The last named, an interesting new species originally described from Guatemala by Mr. Sclater (Proc. Zool. Soc. 1858, p. 130), was first obtained within the limits of the United States by Dr. Cooper; I myself rediscovered it on the Gila river in Arizona.

Agelæus tricolor is the common Blackbird of this region. Familiar, tame, and unsuspicious, flocks of thousands continually circle about our very heads, fill the streets of the little town, and blacken the housetops. I am ashamed to say how many I procured at a single discharge of my gun. I noticed that at this season the two sexes keep in a great measure in separate flocks. Of the many that I examined, not a single male was in perfect plumage. I never saw an *A. phæniceus* or *A. gubernator* among them; but great numbers of *Scolecophagus cyanocephalus* are their constant and familiar companions.

The little *Carpodacus frontalis* had been my companion from the Rio Grande to the Pacific; and here I found "Linnetts," as they are called, common enough. I was somewhat surprised to find them in full plumage, singing volubly, and apparently

* This species is generically quite distinct from *Ægialites* or any other genus of *Charadriidæ* with which I am acquainted. I have elsewhere instituted a genus for it.

paired. But, then, it was not so astonishing after all; for in the garden of Southern California, even in November, I plucked ripe oranges and lemons from the trees, and ate figs and olives and luscious grapes grown in the open air, while the atmosphere was balmy as a May morning at home.

To my surprise and gratification, I was here enabled to study no less than three species of the difficult group of *Passerculi*, all of which I found very abundant. *P. rostratus* kept among the thick weeds of the dry plain, being much on the ground, where it runs as easily as a *Pipilo*, and often flying up into the bushes and resting quietly so that it could be readily shot. It associates freely with both the other species; and I have seen great numbers sunning themselves and catching flies on the piles of lumber that lay on the wharf, when they were so tame that I could have struck them with an ordinary cane. *P. anthinus* seemed confined to the moist salt grass and sedgy weeds of the seashore itself. When with difficulty it was flushed, its flight was very rapid and irregular; and it would alight again almost immediately, and run with great celerity among the roots of the thick grasses. It was thus exceedingly difficult to procure. *P. alaudinus* was common two or three miles away from the coast, but on the seashore itself I never found one mixing with *P. anthinus*; it is a brush- and weed- rather than a grass-species. I found it associating with *Anthus ludovicianus* and *Zonotrichia coronata*.

Regarding the specific relations of these *Passerculi*, I may state that *P. rostratus* differs so widely as to almost merit generic distinction. Of the two others, *P. anthinus* seems tolerably distinct, in its much darker colours, bright yellow about the head, and very numerous, distinct, dark-coloured spots over nearly the whole lower parts, together with a somewhat differently shaped bill. *P. alaudinus* is much greyer and lighter-coloured generally, with a grey rather than yellow superciliary streak, and few sparsely distributed light-grey spots beneath. These points, taken into consideration with the differences of habit above noted, and the fact that, though thus found in the same localities, they constantly preserve their peculiarities, are perhaps sufficient to establish specific diversity. I must candidly confess, however, that I cannot satisfactorily

distinguish *P. alaudinus* from the common Eastern *P. savanna*. In large series of the latter, shot about Washington, I have found fully as great differences as I have ever detected in comparing the eastern with the western forms.

The preceding birds are the characteristic species of the immediate vicinity, and include perhaps a majority of the land species. I cannot better give an idea of the number, variety, and interest of the Waders and Swimmers that were all crowded into the little bay of San Pedro, which is at the mouth of the San Gabriel river, than by epitomizing a day that I spent most delightfully sailing about with Dr. Cooper, whose hospitality I enjoyed during my stay, and whose conversation was to me an encyclopædia of interesting biographies of the birds of the Pacific coast.

It was difficult navigation along the intricate channel of the bay, even for our boat which did not draw a foot of water. Most extensive mud-bars and flats were laid bare by the receding tide, all crowded with Waders. Conspicuous among them the large *Numenius longirostris* stalked with dignity about, or flew by us in flocks uttering its loud cries. Associating with each other, and with the Curlews, *Symphemia semipalmata*, *Gambetta melanoleuca*, and *Limosa fedoa* helped the Curlews to keep us from shooting any Geese by their incessant vociferations. Sprinkled among these larger Waders, immense flocks of the Pigmies, *Actodromas minutilla* and *Ereunetes pusillus*, left myriads of little tracks in the soft mud for the next tide to efface.

Standing in the shallow water, often hundreds of yards from visible land, the Herons crooked their necks and darted their bills at luckless fish—*Garzetta candidissima*, *Herodias egretta*, and, towering above them all, the great *Ardea herodias*, the latter tall enough to rear his whole neck above the tallest grass of the sedgy flats. More hidden among the grasses and reeds, numbers of Geese were feeding on succulent shoots; but they are so much annoyed that it was hard to kill them. No less than five species are to be seen—*Anser hyperboreus*, *A. gambeli*, *Bernicla hutchinsi*, *B. canadensis*, and *B. nigricans*; and I believe I have named them somewhat in the order of their abundance, though perhaps Hutchins's Goose is commoner than

the two first. But over the bay, though we saw many Ducks and Geese, they neither are so numerous as they are a little way from the sea on the lagoons and marshes of the San Gabriel river, or even (in the case of the Geese at least) on the dry bare plains. There is one exception to this, in *Pelionetta perspicillata*, which never, I believe, leaves the sea and its estuaries; they were in sight all day, rising and falling with the waves of the ocean.

On the edges of the mud-flats sat rows of black uncouth-looking birds, bolt upright, with drooping wings, apparently enjoying the sun while digesting the mass of food with which, I have no doubt, their stomachs were overloaded. Gastric activity is usually, in birds as in man, in inverse ratio to mental acuteness; and these birds allowed themselves to be shot with a nonchalance highly amusing and gratifying. *Graculus dilophus* they were, in spite of their white breasts, which only indicated that they were not yet a year old. When older they are lustrous black, but still very different from *G. penicillatus*, which, by the way, is also found here, though rather rare. They have jealous (that is, green eyes), like all Cormorants; and the brilliant orange gular pouch and sides of the bill contrast finely with their dark plumage.

Speaking of these *Totipalmi* naturally calls to mind some others of the tribe. *Pelecanus fuscus* is a constant feature of the air, land, and water of this bay. Strange-looking birds, "all bill and wings," as has been remarked of them, flapping lazily along high over head, and with a queer twisting gyration of the body, with stiffly extended wings and immoveable bill, down they splash into the water with more "vims" than one would imagine them capable of. They are concealed for a few moments in the spray they raise; when they reappear, it is to fly off if the dive has been bootless—to sit still, drain the water from the pouch, and, with a toss of the head, jerk the fish into their capacious gullets if perchance they have been successful. On the water their motions are easy gracefulness itself. Notwithstanding the bulk of their bodies, and the long head and neck to be supported, they sit on the water lightly as an egg-shell.

We see how this is accomplished if we skin one. The hypertrophy of the subcutaneous cellular tissue (which is on the lower parts an inch thick), and its connexion with the hollow bones and air-tubes of the lungs, so that they can inflate it at pleasure, makes them as light as a lifeboat. They fly by long heavy powerful beats, which alternate with short sailings. Often they do just as I have described of the Cormorants, and for precisely similar reasons. At this season (November) their necks are white, their heads and portions of the jugulum yellow. The bill is brilliant carmine or pinkish-vermilion, which, in a few hours after death, fades into reddish flesh-colour. The nail is yellowish white, with a black base; the gular pouch dirty ochraceous green. The space around the eye is pinkish flesh-colour, and the soft base of the upper mandible is black.

While *P. fuscus* was thus so common on the bay, not an individual of *P. erythorhynchus* was to be seen; but two or three miles inland, on the freshwater ponds and lagoons, they are in great plenty. And in these lagoons, with the White Pelicans, let me mention, by the way, that *Macrorhamphus scolopaceus* is very common. It does not seem to go on to the salt-flats at all. I believe its habits are very similar to those of *Micropalama himantopus*. The species is one that is rather snubbed by American ornithologists, and has hardly found a champion to vindicate its distinctness from *M. griseus*, except Mr. Lawrence. Neither Dr. Cooper nor I have any doubt of its validity as a species.

Being on a sea coast, of course we anticipated *Laridæ* of several sorts. Nor were we disappointed. Foremost among the larger species stands "the Gull" *par excellence* of the Pacific coast, *L. occidentalis*, so well marked by its huge bill and dark mantle. It is a singular fact that, contrary to the law so generally prevailing among *Lari*, this bird does not, in winter, have the occiput and nape streaked with grey. I do not say this is never the case; but of hundreds (perfect adults) that I have closely examined—for it is not a shy species—not one had any trace of grey, but the parts were as pure white as in summer. At the same time all the other Gulls were thus marked. Probably the next common species was *Larus delawarensis*; and

after that come *L. californicus* and *L. smithsonianus*. The latter, first brought, I believe, from the Pacific coast by the United States' Exploring Expedition under Commodore Wilkes, is now recognized as a regular inhabitant of that region. *Blasipus heermanni* was common, as usual assiduously devoted in his attentions to the Pelicans.

Connecting the Gulls with the Terns, came the little *Chroicocephalus philadelphia*, everywhere so abundant, and here one of the most common of the longipennines. Terns of several species were dashing about over our heads; I could identify positively only *Thalasseus regius*. But I think I also saw *Sterna acuflava*, which has not, to my knowledge, been as yet recorded from the Pacific coast of North America, though Mr. Salvin has it from Pacific Central America. A small Tern, not very common, was in all probability *S. forsteri*; and here I must make the passing remark that the more I see of the immature stages of this changeable species, the more thoroughly I am convinced that *Sterna havelli* is not a valid species.

Our generally received impression regarding the Loons and Grebes is that they are exceedingly difficult to shoot, in consequence of their wariness joined to unparalleled powers of rapid diving. Now this depends, I think, altogether upon the extent to which they are annoyed and persecuted. The tamest Ducks, or even Coots, could not be more unwatchful and unsuspicious than were the Loons and Grebes here at San Pedro bay. As our boat sailed along they would rarely move off before giving me a fair shot; and I almost invariably killed my bird, since they did not dive so quickly as to avoid the shot. And about the wharf, and among the boats moored near it, they swam as unconcernedly as tame Ducks. I remember once when I could have struck a *Colymbus pacificus* with a boat-hook. And leaning over the taffrail of some vessel, with several of these Loons quietly disporting in the water below me, I felt that indeed I was a favoured ornithologist; for how many of my brethren have been able to study Loons in their native wilds, only a few feet from the eye, and to note every motion, when in, or on, or over the water? Their appearance when returning to the surface after a long dive is peculiar; and really they look more like fish

than birds. The bubbles of air clinging all over their backs gives them a beautiful spangled appearance; and when emerging from the sea, with a slight shiver of the feathers these spangles disappear; the water rolls away too, and the feathers are as dry as though they had not been submerged. A common habit with all the Loons is to swim slowly about with the neck gracefully curved, and the bill thrust up to the eyes in the water. What this is for I really do not know; certain it is I never saw them take fish or other food in this way. They seemed to be simply *tasting* the water.

The species we saw were *C. torquatus* (or *glacialis*, as Mr. Sclater would contend), *C. septentrionalis*, and *C. pacificus*. Concerning this last, there is now really no doubt, I think, that it is a species exceedingly closely related to *C. arcticus*, and in fact scarcely to be distinguished except by some differences of dimension, as stated in my "Review of the *Colymbidæ* and *Podicipidæ*"*. Mr. Lawrence's types were young birds; but dozens of mature ones, in breeding-plumage, which I have examined, show precisely the pattern of coloration that obtains in adult *C. arcticus*.

The Grebes we saw were *Æchmophorus occidentalis* and *Podiceps californicus*, both of which were very common, the latter the most so, on the lagoons back from the sea as well as on the bay. The first named is a splendid-looking bird on the water, riding very lightly, its long neck held erect, the bill pointing horizontally forwards. This length of neck makes the motion during the act of diving a very peculiar one; and not one of them ever was quick enough to escape my shot. They fly with both neck and feet outstretched. It is a pity the colours of some parts change in drying; they are so very beautiful. The iris is bright orange-red, with a shade of pink; and on widely separating

* *Vide* Proc. Acad. Philad. April 1862, p. 28. Dr. Cooper has obligingly furnished me, from his MS. notes, the following description:—"Adult female, San Diego, Cal., May 6. Differs from *C. arcticus*, as figured and described by Audubon, in the smaller size; spots on wing-coverts oblong, not round; outer edge of quill black, not grey; tail black. Purple of throat rounded below instead of pointed. No black and white streaks on front of neck. Tarsi and feet black. The webs and outside of the feet bluish in life."

the eyelids, a narrow ring of pure white is seen encircling the cornea. The bill is rather bright yellow, the culmen and gonys more greenish; the hard parts of the mouth the same, the soft fauces light purple or lavender. The insides of the legs and soles of the feet are black; the outside of the tarsus and dorsum of the foot dull bluish-green; the centres of each web yellowish flesh-colour. I found their stomachs crammed with a species of slender aquatic grass.

All these birds were around us while on the bay. A long low sandy island lies across its mouth as a breakwater; and on the sea-side of this the Doctor assured me I should see another bird that does not ever leave the sea-beach itself, and withal so rare in collections as to make the acquisition of good specimens a matter of some consequence. It was the *Ægialites nivosus* of Cassin, first noticed, I believe, by Dr. A. L. Heermann, in the Ornithological Report of Lieut. R. S. Williamson's Survey for a Pacific Railroad (1859, p. 64), under the name of "*Charadrius cantianus*, Lath.," but very different, of course, from any other North American or European Plover—so much so, indeed, that Bonaparte places it in his genus *Leucopoliis*. It was only a few hundred yards from where we landed, on the bay side of the island, to the shore of the "far-resounding sea;" but, by racing at full speed through the heavy soft sand, joined to the exciting expectation of so soon seeing a new bird, I was quite breathless, and my heart was thumping furiously by the time I stepped on the moist sand. Yes! there they were sure enough, a flock of snow-white little beauties, dallying so fearlessly with the huge waves. I fancy my chagrin and disgust must have partaken a little of the sublime when, after blindly blazing away into the flock, I picked up a capful of—*Sanderlings*! Dr. Cooper's cachinations nowise tended to smooth my ruffled mental plumage. However, a few moments afterwards a flock of *Æ. nivosus* alighted close by me; and, with a little patience and strategy, I soon had a dozen of the lovely birds in my hands. They are not at all shy, rather the reverse; but the hue of their backs so exactly corresponds with that of the sand, that it is next to impossible to see them until they move. I believe they never leave the open sandy beach for lagunes or mud-flats.

They are found in little flocks of from two or three to as many dozen, and associate in the utmost intimacy with *Calidris arenaria*. On approach they run swiftly, with lowered heads, only taking flight when hard pressed; but they scatter and straggle so much that it is difficult to kill many at a shot. At high tide they are found in the loose, uneven, dry sand just above the water-mark, but at other times feed in the wet sand and among the weed-covered rocks, quite among the breakers. They fly rapidly, in close flocks, wheeling so as to show alternately the upper and under parts. Their note is a low mellow whistle. Those that I shot were not very fat. In the winter plumage the rufous-brown cap is wanting, the crown being nearly or quite the same colour as the back. The bill is black; the eyes dark brown; the legs pale livid blue; the feet blackish. Length from 6·5 to 7 inches, extent of wings 13·5 to 14 inches.

I should like much to take my readers with me on the Pacific, that we might study together such rare and interesting birds as *Cerorhina monocerata*, *Ptychorhamphus aleuticus*, *Brachyrhamphus hypoleucus*, and the numbers of little-known Petrels that enrich the coast of Lower California. But the length of this paper warns me that I must check my restless pen.

Washington, D. C., January 29, 1866.

XXIII.—On the Genus *Oxynotus* of *Mauritius* and *Réunion*.

By FRANÇOIS POLLEN, Honorary Assistant of the Royal Museum of Leyden, &c.

(Plates VII. and VIII.)

A SHORT time since, on paying a visit to Mr. Edward Newton, I had the opportunity of reading in 'The Ibis' for 1865 (p. 530) some remarks by its editor on my "Note sur l'*Oxynotus ferrugineus*," lately published by the Société Impériale d'Acclimatation et d'Histoire Naturelle de l'île de la Réunion. I must acknowledge that my description and figures of the *Oxynotus* of Réunion do not apply to the allied bird of Mauritius, and that I probably made a mistake in describing the former under the name of *O. ferrugineus*. When I published that paper I had never seen a specimen of the Mauritian bird; and it was